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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Ernesto Lasalandra

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EXAMINER

AMRANY, ADI

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/788,962	<b>Applicant(s)</b> LASALANDRA ET AL.	
	<b>Examiner</b> ADI AMRANY	<b>Art Unit</b> 2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicants' arguments, filed April 10, 2008, with respect to the rejection under Jeenicke have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Woehrl, previously presented as a secondary reference.

Woehrl discloses two sensors (2, 3), positioned along different axis, wherein the outputs from each are passed through an OR gate and an AND gate (52, 43), and the selected logic value is provided by an additional OR gate (44). It is noted that the pending claims only recite generating a logic value. Woehrl meets this limitation, although the Woehrl logic value (L3) is passed through additional gates and is not the final output of the safety device. There is no positive recitation in the claims that the logic value is a triggering or activation signal that has any use after it is generated.

Lastly, contrary to applicants' remarks, new claim 30 depends from claim 21, not 1.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5, 9-15, 17-18 and 21-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woehrl (US 5,173,614).

With respect to claims 1 and 9, Woehrl discloses a portable (vehicle) multidirectional inertial device (fig 1, 2; col. 1, lines 6-10) having a plurality of preferential detection axes (A2, A3; col. 4, lines 52-67), comprising: inertial sensor means (2, 3); transduction means (7-10, 7'-10'; col. 5);

first comparison means (52; col. 7, lines 18-49) supplying a selected logic value (output of 44) when only a first or only a second acceleration signal is greater than a first threshold (Sa5); and

second comparison means (43) supplying the selected logic value (44) when any two acceleration signals are each greater than a second threshold (Sa4).

With respect to claim 9, the "output" of the multidirectional inertial device is interpreted as the output of the OR gate (44). It is noted that claim 9 does not require supplying the logic value to the output of the electronic apparatus or the device for reactivation.

Woehrl discloses that the logic value is generated when either: 1) a first OR gate (52) senses that only a first/second acceleration signal is above a first threshold; or 2) an AND gate (43) senses that both first/second acceleration signals are above a second threshold. Woehrl does not expressly disclose the second threshold (Sa4) is smaller than the first threshold (Sa5). Woehrl discloses that the thresholds can be selected to any value which would properly indicate a vehicle crash (col. 7, lines 24-30). At the time of the invention by applicants, it would have been obvious to one skilled in the art to select the Woehrl threshold values such that Sa4 is lower (smaller) than Sa5, since it

has been held that discovering the optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

As discussed above, although the Woehrl logic value (conductor L3) is not the final output of the safety device, as it does not directly trigger any safety component (airbag), the claims only require “supplying a logic value.”

With respect to claim 2, Woehrl discloses the first comparison means comprises, for each axis (represented by primed numbers) a respective first comparator (51, 51'), which receives the respective one of said upper thresholds (Sa5) and receives the respective one of said acceleration signals, and at least one first logic gate (52), connected to each first comparator.

With respect to claim 3, Woehrl discloses the second comparison means comprises, for each axis, a respective second comparator (41, 41'), which receives the respective one of said lower thresholds (Sa4) and receives the respective one of said acceleration signals, and at least one second logic gate (43) connected to each comparator.

With respect to claim 4, Woehrl discloses the two Sa5 thresholds are equal, as are the Sa4 thresholds, as indicated by the fact that they contain the same designation.

With respect to claim 5, it would have been obvious to set the threshold ratio to  $1/\sqrt{2}$ , since it has been held that discovering the optimum value of a result effective variable involves only routine skill in the art. *In re Boesch* at 272.

With respect to claims 10-12, Woehrl discloses the apparatus necessary to complete the recite method, as discussed above in the rejection of claims 1 and 4-5, respectively.

With respect to claim 13, Woehrl discloses a device comprising an acceleration circuit (2, 3,); a comparator circuit (41, 41', 51, 51'); and a logic circuit (43-44, 52), as discussed above in the rejection of claim 1.

With respect to claim 14, Woehrl discloses a sensor in each detection axes (2, 3); and a transduction circuit (7-11, 7'-11') for each axes to produce the dynamic acceleration signal.

With respect to claim 15, Woehrl discloses a summing junction (10). At the time of the invention by applicant, it would have been obvious to one skilled in the art that subtracting a negative number ("a respective static acceleration value") is identical to adding a reference value (11), as taught by Woehrl.

With respect to claim 17, Woehrl discloses two transduction circuits. At the time of the invention by applicants, it would have been obvious to combine the transduction circuits into one circuit that sequentially outputs the acceleration signals, since it has been held that forming in one piece an article which has formerly been in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

With respect to claim 18, Woehrl discloses two axes (A2, A3).

With respect to claim 21, Woehrl discloses the apparatus necessary to complete the recite method, as discussed above in the rejection of claim 13.

With respect to claims 22-24, Woehrl discloses the detection axes are at right angles (orthogonal and perpendicular) to each other (col. 4, lines 66-67).

With respect to claims 25-28, Woehrl discloses that in forward impacts, the absolute values of the acceleration signals are compared to first and second thresholds (col. 5). As discussed above, it would have been obvious to select the Woehrl first threshold to be higher than the second threshold.

With respect to claims 29-30, Woehrl discloses the step of producing the selected logic value if the level of the acceleration with respect to only the first/second axes exceeds the high threshold comprises producing the selected logic value at an output terminal (output of 44); and the step of producing the selected logic value if the level of acceleration with respect to any two axes exceeds the low threshold comprises producing the selected logic value at the output terminal (col.7 , lines 18-49).

4. Claims 6-8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woehrl in view of Oguchi (US 2002/0033047).

With respect to claims 6-7, Woehrl discloses an inertial sensor means for each of said preferential detection axes, does not expressly disclose said inertial sensor means comprise at least one micro-electro-mechanical sensor with capacitive unbalancing. Oguchi discloses an acceleration sensor comprising a micro-electromechanical sensor with capacitive unbalancing (fig 2; par 41-42).

Woehrl and Oguchi are analogous because they are from the same field of endeavor, namely acceleration force sensors. At the time of the invention by applicants, it would have been obvious to a person of ordinary skill in the art to combine the

multidirectional inertial device disclosed in Woehrl with the micro-electromechanical sensor with capacitive unbalancing disclosed in Oguchi, in order to use a force sensor with a moveable portion that naturally returns to its original position and can continually operate without constant recalibration.

With respect to claim 8, Woehrl discloses the transduction means comprises a current to voltage converter (2), a filter (8); and a rectifier (9-11, 41, 51). The Woehrl sensor outputs a voltage signal to the filter. It would be obvious to one skilled in the art to include a I/V converter (a resistor) in a system that uses a inertial sensor means that outputs a current signal in order to convert the signal acceptable to input into the filter. Further, the subtractor node would be obvious to one skilled in the art since the output of the Woehrl filter is equivalent to subtracting the output of an oppositely biased filter (band-pass vs. band-gap) from the original signal.

5. Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woehrl, in view of Ishiyama (US 6,738,214).

Ishiyama discloses a device comprising an acceleration circuit configured to produce a dynamic acceleration signal corresponding to a level of acceleration on each of a plurality of detection axes, where the device further comprises a portable computer (col. 3, line 11 to col. 4, line 6). The Ishiyama acceleration sensor detects when the device is falling and shuts off sensitive internal components. Further, it would have been obvious to a person of ordinary skill in the art that to combine the device with a cell phone. The motivation for doing so would have been because a cell phone is small



portable electronic device that may be dropped and is subjected to internal component damage, similar to a portable computer.

Woehrl and Ishiyama are analogous because they are from the same field of endeavor, namely acceleration detection circuits. At the time of the invention by applicants it would have been obvious to combine the device disclosed in Woehrl with the portable computer disclosed in Ishiyama, since this limitation is drawn to the end use of the acceleration circuit. One skilled in the art would recognize the advantages of placing the sensors in any electronic device that would experience acceleration.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ADI AMRANY whose telephone number is (571)272-0415. The examiner can normally be reached on Mon-Thurs, from 10am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (571) 272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2836

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael J Sherry/  
Supervisory Patent Examiner, Art Unit 2836

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